IN THE SPECIFICATION:

Replace the abstract (i.e., page 8, lines 1-8) as follows:

-- To efficiently use space capacity and to provide accurate motion vectors for P-pictures, a two-pass search in a P-coding mode of an MPEG encoder is run so that the second pass refines the precision of motion vectors found in the first pass. Within a frame encoding period, the first pass coincides with the time interval used by a known MPEG video encoder in encoding B-pictures to search forward motion vectors with respect to a prior image, and, within the frame encoding period, the second pass coincides with searching backward motion vectors with respect to a subsequent image~~A conventional MPEG video encoder searches forward motion vectors with respect to a previous image and backward motion vectors with respect to a subsequent image in order to provide a motion-compensated prediction image for encoding B-pictures. This requires 2N accesses to the memory in which said images are stored. Searching the motion vectors for P-pictures requires N memory accesses. The invention uses the space capacity by running a two-pass vector search in the P-coding mode. In the second pass, the precision of the motion vectors found in the first pass is further refined. This provides accurate motion vectors for P-pictures~~.--